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THE DOUBLE BIND OF PUBLIC DELIVERY PLATFORMS: A CASE STUDY OF BAEDAL TEUKGEUP IN GYEONGGI-DO, SOUTH KOREA

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Abstract

Why do public digital platforms fail to achieve sustainable adoption despite political backing and financial subsidies? This paper addresses that puzzle through a mixed-method case study of Baedal Teukgeup, the provincial food-delivery platform launched by Gyeonggi-do, South Korea. Drawing on a large-scale news corpus (N = 3,455) and 58 official Gyeonggi Provincial Assembly meeting records (2022–2024), we develop and test an integrative theoretical framework that combines two-sided market economics with ownership-cost governance theory.

We identify a structural "double bind": public platforms must simultaneously ignite cross-side network effects and build retention-oriented complements—logistics, dispatch, iterative app improvement—while operating under governance constraints that slow iteration and diffuse accountability. Our empirical analysis reveals a subsidy trap in which short-term coupons drove trial adoption but failed to produce retention, because complement development lagged behind fiscal and administrative cycles rather than operational demand. We term the near-complete absence of operational and data capacity from public discourse—despite its centrality in legislative records—the "P4 Gap."

The findings support a reorientation from app-centric competition toward infrastructure-centric Government-as-a-Platform design, in which the state constructs open boundary resources—APIs, payment rails, verified registries—on which public and private services can compete on equal terms.

Keywords: public platform, two-sided markets, network effects, ownership costs, Government as a Platform, food delivery, platform cooperativism

1. Introduction: The Public Platform Puzzle

Over the past two decades, digital platforms have shifted from intermediaries to privately owned infrastructures that organize everyday social and economic interaction (Plantin et al., 2018). This broader "platformization" of the web concentrates control through APIs, app stores, and data-centric architectures, allowing a few firms to set de facto standards for others (Helmond, 2015; OECD, 2019; Plantin et al., 2018). The political stakes are high: platforms curate visibility, speech, and opportunity via algorithmic and policy choices, while opacity and trade secrecy impede public scrutiny (Gillespie, 2010; Pasquale, 2015; Winner, 1980). A data-extractive business logic—often described as platform capitalism—amplifies market concentration through network effects and data scale, producing winner-takes-most outcomes across sectors such as ride-hailing, short-term rentals, and food delivery (Rysman, 2009; Sadowski, 2020).

Public actors increasingly respond to these failures of private coordination—monopoly power, information asymmetries, and negative externalities—not only by regulating incumbents but also by building their own digital infrastructures (Bannister & Connolly, 2014; OECD, 2019). Under the "Government as a Platform" (GaaP) paradigm, the state aspires to orchestrate ecosystems by providing core rails (identity, payments, data) on which public and private services can flourish, with the explicit aim of producing public value—here defined as equity, transparency, and responsiveness (Brown et al., 2017; Cordella & Bonina, 2012; Cordella & Paletti, 2019; Janssen & Estevez, 2013; Luna et al., 2024).

Public delivery platforms epitomize this ambition. Confronted with dominant private apps and high commissions on local restaurants, provincial and municipal governments have launched alternatives to reduce costs for small businesses, support local commerce, and embed public values in market infrastructure. Yet a stubborn puzzle remains: despite political backing, subsidies, and a compelling public-value proposition, many public platforms struggle to escape niche status. They fail to reach the critical mass of merchants

and consumers needed for self-sustaining growth; lower fees alone do not turn the adoption tide (Bannister & Connolly, 2014; Rysman, 2009).

This paper explains that puzzle as a structural collision between two forces: (i) the economic dynamics of two-sided markets, where strong cross-side network effects force entrants into a race to solve the "chicken-and-egg" problem while also competing in essential complements (logistics, courier networks, customer support, technical iteration); and (ii) the organizational constraints of public ownership, which lowers certain market costs (e.g., curbing merchant exploitation) but elevates internal ownership costs (bureaucratic delay, multi-stakeholder vetoes, political interference, procurement rigidities) (Armstrong, 2006; Eisenmann et al., 2006; Parker & Van Alstyne, 2005; Rochet & Tirole, 2003, 2006; Hansmann, 1988; Hart & Moore, 1996).

We investigate this thesis through the case of Baedal Teukgeup, the Gyeonggi-do public delivery platform in South Korea. Our empirical strategy combines large-scale news analytics with close reading of government documents to trace how governance structure interacts with network effects and complements over time. The analysis rests on two corpora: (1) approximately 3,000 Korean newspaper articles from BigKinds, spanning October 15, 2020 to October 14, 2025, capturing public discourse and framing; and (2) municipal/provincial policy documents (ordinances, budgets, audits, RFPs, white papers, minutes, press releases) that record intentions, constraints, and implementation pathways (Luna et al., 2024; OECD, 2019). This mixed corpus enables both macro-level pattern detection (topics, frames, actors, stance, temporal breaks) and micro-level process tracing (event sequences, decision rationales, alignment gaps).

Research Questions

- RQ1 (Critical mass): Why did Baedal Teukgeup fail to reach self-sustaining adoption despite low commissions and public subsidies (Rochet & Tirole, 2003, 2006; Rysman, 2009)?

- RQ2 (Ownership costs): How did features of public ownership and governance (e.g., budgeting cycles, procurement rules, political turnover) shape strategic capacity in complements (logistics, rider networks, technical iteration) (Hansmann, 1988; Hart & Moore, 1996)?

- RQ3 (Design & policy): What design and policy levers follow for future public platforms pursuing public value under strong network effects (Brown et al., 2017; Cordella & Paletti, 2019; Janssen & Estevez, 2013)?

Contributions

1. Integrative explanation: We synthesize network-effects economics and ownership-costs governance into a single explanatory framework for public platform (under)performance (Armstrong, 2006; Hansmann, 1988; Rochet & Tirole, 2003, 2006).

2. Empirical mechanism tracing: Using five years of news big data and government records, we identify where and when public governance frictions undermined complement capacity and stalled critical mass (Luna et al., 2024; OECD, 2019).

3. Actionable design & policy: We derive a practical matrix linking failure modes (e.g., courier density deficits, slow app iteration) to levers (capital strategy, governance simplification, public–private complement partnerships) (Brown et al., 2017; Cordella & Paletti, 2019; Janssen & Estevez, 2013).

To guide readers, we employ consistent terminology: public value means equity, transparency, and responsiveness; complements refer to capabilities adjacent to the core matchmaking function (payments, logistics, support, promotion, app iteration); ownership costs denote internal costs of collective decision-making and control allocation in public organizations; market/contracting costs denote

external transaction and bargaining costs borne by users and partners (Bannister & Connolly, 2014; Cordella & Bonina, 2012; Hansmann, 1988). We use public platform for state-initiated services and incumbent private platforms for investor-owned rivals.

Beyond solving a sectoral puzzle, the case matters for democratic governance. If governments cannot marshal the organizational speed and complementary capacity required by networked markets, public value objectives risk remaining aspirational (Cordella & Bonina, 2012; Luna et al., 2024). Conversely, if we can specify where governance frictions most acutely degrade complement performance, policy can target those bottlenecks—e.g., pre-approved procurement tracks for iterative software updates, long-horizon capital arrangements for courier density, or structured partnerships that hybridize public accountability with private operational scale (Brown et al., 2017; Janssen & Estevez, 2013).

The remainder of the paper is organized as follows. We first develop the theoretical framework that links network effects to ownership and governance costs in platform competition (Armstrong, 2006; Rochet & Tirole, 2006). We then describe data and methods, combining text mining on the BigKinds corpus with qualitative coding and process tracing on policy documents. The results section presents temporal topic/stance dynamics, actor networks, and alignment gaps, followed by a comparative analysis of complements capacity. We conclude with design and policy implications for digital public infrastructure, limitations, and avenues for future research (Bannister & Connolly, 2014; Cordella & Paletti, 2019).

2. Theoretical Frameworks

Publicly backed delivery platforms compete in markets where two structural logics interact. The first is the economics of two-sided markets (TSMs)—a coordination regime in which value is generated by cross-side participation, reinforced by complements, and stabilized by switching costs and standards (Rochet & Tirole, 2003, 2006; Rysman, 2009; Parker & Van Alstyne, 2005;

Armstrong, 2006; Eisenmann et al., 2006; Hagiu & Wright, 2015; Caillaud & Jullien, 2003). The second is the ownership/governance logic that allocates residual control and claims, thereby shaping how fast a platform can learn, iterate, and commit to its ecosystem (Hansmann, 1988; Hart & Moore, 1996). Across both logics runs a broader sociotechnical observation: platforms increasingly operate as privately owned infrastructure, governing access and interconnection via standards, APIs, and policy bundles; their design decisions thus carry political and distributive effects (Helmond, 2015; Plantin et al., 2018; Star, 1999; Gillespie, 2010; Pasquale, 2015).

This section first maps the core concepts of TSMs that matter for public entrants and then develops a governance-centric lens grounded in ownership theory. It concludes with an integrated frame (P1–P5) that states concise propositions that can be tested in the case of a public delivery platform.

2.1 Two-Sided Markets and Critical Mass

2.1.1 Indirect Network Effects and Cross-Subsidization

A platform is not simply a technology; it is a market-making mechanism that intermediates between interdependent groups—in the delivery domain, restaurants, couriers, and consumers (Rochet & Tirole, 2003, 2006). The defining feature is the indirect (cross-side) network effect: the value to participants on one side increases with participation on the other (Rysman, 2009). Importantly, platforms therefore optimize not only “how much to charge” but “to whom to charge”. The strategic variable is price structure—the allocation of fees and subsidies across sides—rather than the aggregate price level (Parker & Van Alstyne, 2005; Armstrong, 2006). In equilibrium, platforms often cross-subsidize a side that is more price-sensitive or more pivotal for generating cross-side value (Eisenmann et al., 2006). In delivery markets, this may entail consumer discounts and loyalty credits, while recovering rents from merchant commissions or logistics fees.

This structure is not cosmetic. Cross-side elasticity determines whether a marginal subsidy on one side lifts participation enough on the other to raise total surplus and, for private incumbents, profit (Armstrong, 2006; Eisenmann et al., 2006). The same logic informs launch tactics: subsidize the side that ignites the stronger cross-side response, then rebalance once liquidity improves (Caillaud & Jullien, 2003).

2.1.2 The Chicken-and-Egg Problem and Critical Mass

Cross-side dependence makes early growth a coordination problem. No consumer joins a platform with few restaurants; few restaurants join a platform with few consumers. The resulting chicken-and-egg dilemma requires platforms to manufacture initial liquidity with targeted subsidies, staged geographies, guaranteed minimums, or pre-loaded complements (Caillaud & Jullien, 2003; Eisenmann et al., 2006). The moment at which mutually reinforcing participation takes hold is the critical mass threshold (Rochet & Tirole, 2006). Before that threshold, churn is common and price instruments have weak persistence; after it, incremental participation on either side becomes self-propelling.

Public entrants frequently underestimate how localized this threshold is. Liquidity must arise co-spatially (same districts, same hours), not just in aggregate. A shallow pool of restaurants and couriers spread thin across neighborhoods can generate the appearance of scale without delivering the density required for fast matching and reliable delivery times.

2.1.3 Multi-Homing, Switching Costs, and the Role of Complements

Whether a platform can preserve and deepen its network effects depends on multi-homing and complements. Multi-homing occurs when participants simultaneously use multiple platforms (Eisenmann et al., 2006; Hagiu & Wright,

2015). In delivery, merchants and riders typically multi-home; consumers may single-home once habits, loyalty points, and UX familiarity set in. Low multi-homing costs dilute cross-side effects and make tipping less likely, pushing competition into persistent subsidy battles (Eisenmann et al., 2006).

The counter is to build complements and switching costs that increase perceived value and reduce promiscuous participation. In this domain, complements include: (a) logistics and dispatch (courier density, routing precision, batching), (b) mapping/geo quality (address resolution, ETA accuracy), (c) payments and wallets (frictionless checkout, refunds), and (d) identity/ratings/reviews that anchor reputation (Hagiu & Wright, 2015; Eisenmann et al., 2006). Complements convert a basic matching service into a thick ecosystem. Notably, complements compound: better dispatch improves delivery times, which raises consumer demand at peak, which draws more couriers, which lowers pickup delays—an operational flywheel reinforcing the economic one.

For public entrants, this logic implies a hard constraint: subsidies acquire; complements retain. If complements are inferior—thin courier pools at peak, imprecise maps, clunky payments—then users will trial during subsidy windows and defect once they experience reliability shocks (Eisenmann et al., 2006).

2.1.4 Strategy and Regulatory Implications for Public Entrants

The managerial upshot is clear. In TSMs, success hinges on price structure design, complement strategy, and multi-homing management, not merely on feature parity or brand (Parker & Van Alstyne, 2005; Eisenmann et al., 2006). For governments, antitrust and policy tools must reflect cross-side effects: market power can be exercised through pricing asymmetries, access rules, and control over boundary resources (OECD, 2019). Remedies that address only one side's fees may have limited effect if complements and switching costs remain skewed toward incumbents.

2.2 Ownership, Residual Control, and Governance Costs

2.2.1 Hansmann's Principle: Minimize Total Costs of Ownership

Ownership theory asks a simple question: who should own the enterprise to minimize total costs—the sum of (a) market-contracting costs borne by non-owners (e.g., hold-up risk, monopoly pricing, quality shirking) and (b) the ownership (governance) costs of collective decision-making, monitoring, and residual risk bearing (Hansmann, 1988). Ownership matters because it allocates residual control when contracts are incomplete and residual claims to any surplus. In platforms, ownership therefore sets the rules of learning (iteration speed), commitment (credibility to complementors), and distribution (who captures rents from network effects).

2.2.2 Investor Ownership: Speed and Appropriation

Investor-owned platforms centralize residual control in a small set of principals (shareholders/board), enabling agile experimentation and rapid redeployment of capital toward complements and data infrastructure. Their governance minimizes decision costs for strategic pivots and monetization moves, but pushes contracting costs onto others: merchants face high commissions, workers bear volatility and algorithmic oversight, and users face opaque data practices (Hart & Moore, 1996; Pasquale, 2015; Sadowski, 2020). Economically, this is not accidental; investor ownership is optimized for appropriating network rents, and it performs that function efficiently.

2.2.3 Public and Quasi-public Ownership: Value Alignment, Execution Risk

Public and quasi-public ownership seek to internalize public values—equity, access, regional vitality—by restraining rent extraction and re-prioritizing service goals. But this often raises ownership costs in three ways.

1. Multi-principal decision-making. Decisions on features, fees, and data policy must navigate political oversight, statutory constraints, and external scrutiny. This raises deliberation costs and can slow iteration—a critical handicap in logistics-intensive platforms where continuous tuning is essential (Hansmann, 1988).

2. Ambiguous accountability. Without a single bottom line like profit, performance accountability diffuses, making it harder to authorize bold product changes or to sunset failing features quickly (Hart & Moore, 1996).

3. Value pluralism and goal conflict. Public platforms must reconcile low fees for merchants, fair pay for riders, low prices for consumers, and regional equity. These aims can conflict in the short run, producing lowest-common-denominator compromises that weaken user-perceived quality (Gillespie, 2010; Pasquale, 2015).

The result is a likely speed-of-learning deficit: even with funding, public owners may iterate more slowly on dispatch algorithms, incentive targeting, and boundary-resource design (APIs, SDKs, data pipelines). Over time, a small gap in iteration rates produces large differences in user utility trajectories, especially under network effects.

2.2.4 Cooperative and Community-Anchored Ownership: Alignment with Frictions

Platform cooperativism proposes a distinct alternative: clone the technology stack but replace investor ownership with stakeholder governance—riders, restaurants, or communities (Scholz, 2016; Mannan & Schneider, 2021). The promise is direct: align residual control with those who bear contracting costs. In principle, this can internalize cross-side externalities: rider-owners invest in service reliability; merchant-owners support availability and fair fees; community owners prioritize access.

Yet such models face well-known frictions:

- Heterogeneous member interests. Riders (seek higher pay), restaurants (seek lower commissions), and consumers (seek low prices and fast delivery) have structurally divergent preferences. With many principals, governance can drift toward inefficient compromise or stall (Hart & Moore, 1996).

- Capital and complement intensity. Competing on logistics, mapping, and payments demands sustained capital and specialized engineering capacity. Co-ops can be structurally disadvantaged in raising such capital at speed (Scholz, 2016).

- Scaling governance. Multi-stakeholder boards and democratic processes are normatively attractive but operationally heavy, particularly when ecosystem response times are measured in weeks, not quarters (Mannan & Schneider, 2021).

These do not imply infeasibility; they imply the need for designs that modularize governance (e.g., technics delegated to professional management under mission locks) and federate capital expenditures across locales. Still, the net

effect in competitive delivery markets is that co-ops frequently succeed in niche geographies but struggle to match incumbent complements at scale.

2.3 Integrating the Logics: Propositions for Public Delivery Platforms

Bringing the two lenses together, public entrants face a double bind. They must build the TSM engine—liquidity, complements, switching costs—while operating under ownership constraints that slow iteration and diffuse accountability. The five propositions below translate this into testable claims for your case.

P1 — Critical-mass failure (liquidity deficit).
(Shallow local pools + high multi-homing + inferior complements) → weak cross-side effects → tipping not achieved.
When restaurants, couriers, and consumers are thinly distributed across neighborhoods, and when incumbents remain one tap away, cross-side effects fail to ignite. Coupons induce trials but not sustained participation (Rochet & Tirole, 2006; Armstrong, 2006; Eisenmann et al., 2006; Caillaud & Jullien, 2003; Rysman, 2009).

P2 — Acquisition–retention asymmetry (subsidies vs. complements).
Subsidies acquire; complements retain.
Short-term discounts shift activity temporarily, but retention depends on dispatch reliability, ETA accuracy, variety density, and frictionless payments. Without complement parity and some designed switching costs, users revert to incumbents (Parker & Van Alstyne, 2005; Eisenmann et al., 2006; Hagiu & Wright, 2015; OECD, 2019).

P3 — Ownership/governance costs depress the utility growth rate.
Public/quasi-public governance → deliberation costs ↑ → slower experimentation → user utility grows more slowly than incumbents'.
Even if initial fees are attractive, a lower iteration cadence on logistics and

boundary resources cumulates into widening experience gaps (Hansmann, 1988; Hart & Moore, 1996).

P4 — Data governance and the politics of platforms.
Conservative data integration + politicized decisions about ranking and enforcement → weaker personalization/matching and diffused accountability.
Platform governance is not neutral; ranking and recommendation embody choices with distributional consequences (Gillespie, 2010; Pasquale, 2015).
Where public agencies restrict data use or cannot transparently tune models, matching quality may lag, and no single actor owns reliability outcomes.

P5 — Policy–market mismatch (public value vs. user calculus).
Public values (fee relief, regional equity) ≠ users' micro-utility (speed, variety, reliability, perceived fairness).
In a "platform society," everyday choices are mediated by private infrastructures that excel at convenience (van Dijck et al., 2018). Unless public platforms compete at the infrastructural layer—boundary-resource quality, complement depth, and credible commitments—normative value promises will not translate into adoption (Kenney & Zysman, 2016).

2.4 Government-as-a-Platform (GaaP): Boundary Resources as the Public Lever

"Government as a platform" reframes the state's role from direct service delivery to ecosystem orchestration through boundary resources—standards, APIs, developer support, and data services that third parties can build on (Plantin et al., 2018; Helmond, 2015). For delivery, that means designing public digital rails (e.g., secure ID, standardized menus/catalogs, payment rails, address registries) to lower complementors' fixed costs.

Applied to our propositions:

- To P1–P2 (liquidity & complements): A GaaP approach can pre-supply complements (e.g., verified address registry, open routing services) so that public entrants are not starting from zero. If boundary resources are reliable and open, complementors can thicken the ecosystem faster than a single public app could on its own.

- To P3–P4 (governance & data politics): GaaP clarifies accountability by modularizing roles: the state maintains the rails; platform operators compete on UX. It also enables transparent rules for data access and audit (Pasquale, 2015), reducing black-box distrust while preserving operational agility.

- To P5 (value mismatch): By improving infrastructural quality, GaaP narrows the gap between public values and user micro-utility—speed, reliability, variety—so that normative goals are not purchased at the expense of the user experience.

In short, the integrated logic suggests that public interventions should move downward from app-layer competition to infrastructure-layer market-making, where policy can shape the conditions of competition rather than only its prices.

Two-sided markets explain what public entrants must accomplish: ignite cross-side liquidity and sustain it with complements and switching costs. Ownership theory explains why public entrants often struggle to execute: multi-principal governance slows iteration and blurs accountability, especially around data-intensive logistics and boundary resources. The joint implication is that fee relief alone rarely produces durable networks. Instead, public success hinges on complement parity, credible commitments, and governance designs that preserve iteration speed while aligning residual control with public value.

The five propositions (P1–P5) translate these ideas into a testable plan for the case: audit liquidity/complements, inspect price structure and subsidy

persistence, trace iteration cadence and data governance, and compare public values with user-side micro-utility. The analysis that follows uses these lenses to explain why a public delivery platform stalled below critical mass despite normative justification—and how an infrastructure-first (GaaP) design could change the competitive substrate on which such platforms operate.

3.Data and Methods

This study draws on two complementary textual corpora concerning Baedal Teukgeup, Gyeonggi Province's public food-delivery platform. The first is a large news corpus (N = 3,455) of Korean newspaper articles from BigKinds, spanning October 2020 to October 2025, which captures public discourse, framing, and temporal dynamics. The second consists of 58 targeted excerpts from the 11th Gyeonggi Provincial Assembly meeting minutes (2022–2024) in which Baedal Teukgeup is explicitly discussed, providing institutional depth on governance deliberations, budget decisions, and accountability exchanges.

To analyze these corpora systematically, we employ a proposition-guided approach in which each document is aligned to one of five theory-derived propositions (P1–P5) using sentence embeddings and cosine similarity scoring. The five propositions — covering critical-mass failure (P1), acquisition-retention asymmetry (P2), governance costs (P3), data politics (P4), and public-value vs. user-experience gaps (P5) — serve as both analytical anchors and the organizing structure for the results section. This design preserves theoretical alignment while allowing the data to surface patterns inductively within each proposition.

The two corpora serve complementary roles. The news corpus provides breadth: it reveals which propositions dominate public discourse and how salience shifts over time. The assembly minutes provide depth: they expose institutional deliberations that rarely surface in media coverage — most notably the near-complete absence of P4 (operational and data capacity) from public reporting despite its centrality in legislative debate. Together, the two sources enable triangulation between what was said publicly and what was known internally.

All source materials are publicly available. The news corpus was obtained through BigKinds, South Korea's press archive platform; the assembly minutes are official public records of the Gyeonggi Provincial Assembly.

4. Results

This study analyzes the structural challenges of the public platform Baedal Teukgeup by triangulating two distinct datasets, consistent with the proposition-guided semisupervised methodology described earlier. The first dataset is a large-scale computational analysis of 3,455 news and public documents (hereafter, the "News Corpus"). The second is a qualitative analysis of 58 official provincial and municipal legislative records (e.g., administrative audits, budget proposals, committee minutes) from 2022 to 2024 in which Baedal Teukgeup is explicitly discussed (hereafter, the "Minutes Corpus").

The analysis identified and validated five propositions (P1–P5) derived from the theoretical framework. The quantitative distribution of these themes in the News Corpus (Table 1) reveals the dominant public-facing discourse, while the Minutes Corpus clarifies how institutional attention clustered around governance and accountability.

Table 1. Prevalence of theoretical propositions in the News Corpus (N = 3,455)*

	Theme	n	% of corpus
P2	Acquisition–retention asymmetry (subsidies vs. complements)	1,532	44.3%
P3	Ownership/governance costs	796	23.0%
P5	Public-value vs. user-experience gap	648	18.8%
P1	Critical mass / network-effects failure	474	13.7%
P4	Data / political governance	5	0.1%
Total		3,455	100%

The topline pattern is striking. Public discourse is overwhelmingly dominated by Proposition 2 (44.3%), especially its acquisition component—campaigns of discounts and subsidies. The next two themes are Proposition 3 (23.0%), focusing on budgets, oversight, and publicity spending attached to those campaigns, and Proposition 5 (18.8%), which frames the platform's public-value rationale (e.g., lower fees for small merchants, local commerce support). By contrast, Proposition 4—the internal, data/technical capacity required to operate and iterate a platform—registers as almost absent in public reporting (n = 5). As shown below, the Minutes Corpus indicates that this "P4 gap" was well recognized inside government, but it rarely surfaced in public news coverage.

Guided by causal logic rather than numerical order, the sections below begin with the public justification (P5), move to the implementation pattern (P2) and the internal operational gap (P4), then analyze the governance constraints that explain those gaps (P3), and conclude with the market consequence (P1).

4.1 The Justification: Framing the Platform as a Public Good (P5)

The Minutes Corpus consistently frames Baedal Teukgeup as a policy instrument to correct private-platform dominance, rather than as a fully competitive operating alternative. Officials and platform managers repeatedly justified the platform's existence on public-value grounds—"adjusting" the market power (monopoly/oligopoly) of private incumbents (e.g., Baemin, Yogiyo), reducing commission burdens for small merchants through a "1% brokerage commission" headline, and linking the service to ESG-adjacent aims (e.g., reusable containers at local festivals).

- Example (Administrative Audit Session, Gyeonggi Provincial Assembly, Nov 2022): an official explained that public intervention was needed to "adjust market dominance" by private incumbents [M1].

- Example (Budget Committee, Gyeonggi Provincial Assembly, Dec 2022): the "1% commission" was emphasized as the primary mechanism to relieve merchants' fee burdens [M2].

- Example (Special Session on Environmental Programs, 2023): reusable-container pilots were presented as part of the platform's public mission [M3].

This public-value framing also appears in the News Corpus: articles repeatedly highlight the "1% commission" and argue that private delivery apps are "too expensive" for local merchants and consumers, while endorsing province-level correction mechanisms (see [R1], news desks' coverage of commission relief and festival pilots).

4.2 The Strategy–Reality Gap: Subsidies over Complements (P2 & P4)

P2 dominates the News Corpus (44.3%), reflecting an operational focus on short-term incentives. Headlines and articles widely publicize discount calendars ("₩5,000 off every day," "₩3,000 pickup discount," "consumer coupon drives") and festival-linked consumption coupons. In short, the acquisition half of P2 is well evidenced.

By contrast, the retention half of P2—i.e., complements such as courier density, routing accuracy, address resolution, refund flows, loyalty tooling, and catalog freshness—is consistently underdeveloped in the Minutes Corpus. This is the heart of P4 (operations/data mismatch).

Technological integration failure. A planned integration with a traditional-market e-commerce service ("Jangbogo-Baedal Teukgeup") was suspended, with officials citing limitations in manpower, operations, and systems; merchants

were said to prefer onboarding to existing large private platforms in the face of such frictions (Administrative Audit, 2022) [M4].

Logistics/service deficits. In reusable-container pilots, sub-contracted collection was set as low as ₩1,000 per collection, leading to incomplete pickup and odor complaints (Committee on Environment & Welfare, 2023) [M5]. Elsewhere, safety and load constraints for delivery vehicles (e.g., scooters) were flagged, with budget constraints cited for not acquiring appropriate vehicles (Budget Hearing, 2023) [M6].

Performance management gaps. When asked to report industrial-accident processing rates for rider insurance outreach, an official deferred to "written submission" and offered qualitative survey responses instead; the analyst coded this as a data/metrics shortfall for a key complement (Administrative Audit, 2022) [M7].

Officials acknowledged the gap: leadership reported that to achieve competitiveness and self-sustainability against private apps, user-service improvements were essential (General Affairs Committee, 2023) [M8]. A later executive nominee endorsed the platform's commission-relief rationale but proposed a hybrid strategy—linking public and private apps in parallel to access private complements (traffic, logistics, CS) and deliver effective sales-channel support (Confirmation Hearing, 2024) [M9].

Notably, this entire internal discussion—complements and operational capacity (P4)—is nearly absent in the News Corpus (n = 5). Public coverage focuses on the success and visibility of subsidies (P2); internal minutes focus on the failure of complements (P4).

4.3 The Constraint: Governance Costs (P3)

The operational gaps (P4) and complement deficits (P2) are best explained by P3 (public ownership/governance costs)—budgetary procedures, accountability diffusion, vendor lock-ins, and multi-level coordination that slowed iteration.

On the public side, P3 is the second-largest news theme (23.0%), with topic subclusters around supplementary budgets and festival-linked public spending (promotion costs, PR budgets). Example coverage notes exhausted promotion funds and subsequent budget increases that primarily expand PR spending, triggering legislative scrutiny (multiple outlets; see [R1]).

On the institutional side, the Minutes Corpus shows:

1. Budget and accountability frictions. Legislators demanded three-year breakdowns of promotional spending related to Baedal Teukgeup, including execution rates, indicating heightened performance accountability pressure (Budget Committee, 2023) [M10].

2. Coordination and data-governance risks. The platform relies on NHN Payco as a core vendor that both receives maintenance fees and stores all platform data on its servers—and also holds an equity stake in the operating company. Legislators raised conflicts-of-interest and potential Fair Trade issues, noting the implications for strategic agility and data publicness (Administrative Audit / Economy Committee, 2023) [M11].

3. Multi-level governance failures. A national “Good Price Stores” coupon program excluded Baedal Teukgeup, partnering only with nationwide private apps—a gap in central–local policy linkage that blocked a key subsidy channel for the provincial public app (Plenary Q&A, 2024) [M12].

4. Complex stakeholder management. Attempts to integrate a child meal card service stalled under multi-actor cost sharing (Province:Cities ≈ 3:7), API development, and data-governance coordination (Joint Briefing, 2024) [M13].

Taken together, P3 explains why complements lagged: iteration followed a fiscal/committee tempo, not an operational tempo. When iteration is gated by budget calendars, dispatch optimization, catalog freshness, refunds, and loyalty features—the exact retention complements—improve too slowly to matter.

4.4 The Consequence: Failure to Achieve Critical Mass (P1)

Given a subsidy-first strategy (P2), complement deficits (P4), and high governance costs (P3), the platform struggled to reach critical mass (P1). The Minutes Corpus contains direct admissions:

- A legislator in a 2022 audit observed that the app was “not widely installed,” making certain integrations “meaningless” (Administrative Audit, 2022) [M14].

- Officials noted merchants’ preference to link with large external platforms, and that an “online market” feature showed “no stores available for order,” leading to design change/suspension (Committee Hearing, 2022) [M15].

The News Corpus clarifies the competitive context: P1 subtopics emphasize Q-commerce competition (hypermarkets, convenience chains) and incumbent complements, highlighting that public apps remained food-delivery only while private competitors accelerated logistics innovation (e.g., courier density, micro-fulfillment). Commentaries warned that fiscal assistance can distort markets

without building operational capability, and several concluded that public apps "did not show clear effects" in comparative performance.

Synthesis. The evidence fits a simple mechanism: coupons drive trials (P2), but complements lag (P4), so users retreat to incumbents on speed/variety/convenience grounds (P5). Meanwhile, governance cycles (P3) allocate attention to process steps rather than iteration speed. The network flywheel never spins up because the organizational flywheel is constrained.

5. Discussion

The empirical results presented in Section 4 offer a clear, albeit challenging, answer to the "public platform puzzle" articulated in the introduction (Plantin et al., 2018; Sadowski, 2020). The case of Baedal Teukgeup demonstrates a structural collision between the economic dynamics of two-sided markets and the organizational constraints associated with public ownership (Rochet & Tirole, 2003, 2006; Hansmann, 1988). The platform succeeded in articulating a compelling public-value justification (P5) (Gillespie, 2010; Benkler, 2006), but failed to translate this normative goal into a sustainable operational reality (Helmond, 2015; Pasquale, 2015).

Our analysis triangulating the News Corpus and the Minutes Corpus reveals a clear causal mechanism. The platform's implementation strategy was overwhelmingly dominated by Proposition 2 (Acquisition–Retention Asymmetry), relying on short-term subsidies and coupons to drive adoption—politically legible but operationally fragile. This approach effectively addressed the acquisition half of P2 but failed on retention, producing a "subsidy trap." As the theoretical frame implies, subsidies may acquire users, but complements retain them: when discounts ended, users faced an inferior experience and churned, a direct manifestation of the P5 (public-value vs. user-experience) gap (Plantin et al., 2018; Helmond, 2015).

The core contribution of this study is its explanation for why this gap persisted. The failure to build retention-oriented complements (logistics, dispatch, iterative app improvement, payments) was not a simple oversight; it was a structural consequence of Proposition 3 (Ownership/Governance Costs) (Hansmann, 1988; Pasquale, 2015). The results point to a "speed-of-learning deficit" rooted in public governance: platform iteration followed a fiscal/committee tempo (supplementary budgets, administrative audits, promotional spending reviews) rather than the operational tempo required by logistics-intensive markets (Winner, 1980; Star, 1999).

This aligns with ownership-cost perspectives: the public model was designed to internalize public values and reduce market-contracting costs (e.g., merchant fees), but it simultaneously escalated internal ownership costs (Hansmann, 1988). We observe three mechanisms in the Minutes Corpus.

1. Multi-principal decision-making: Strategy fragmented across stakeholders (e.g., province–municipality coordination, cross-agency integrations), impeding timely pivots (Star, 1999; Winner, 1980).

2. Ambiguous accountability: Reliance on a core vendor that also controlled data produced a "black box," diffusing accountability and curbing strategic agility (Pasquale, 2015).

3. Deliberation costs: Intense scrutiny of visible promotional spending (a by-product of the subsidy-led strategy) diverted limited governance attention away from the less visible but critical deficits in operational capacity and complements (Plantin et al., 2018; Sadowski, 2020).

This leads to one of the most significant findings: the "P4 Gap." Proposition 4 (Operational/Data Governance) was marginal in public-facing news but central to internal failure patterns in the minutes: suspended integrations, deficient logistics for complements, and even gaps in basic performance metrics

(Helmond, 2015; Plantin et al., 2018). Public discourse sold P5 (public value) and showcased P2 (subsidies); internal actors, acutely aware of P4 failures, were trapped by P3 constraints that prevented remediation (Pasquale, 2015; Benkler, 2006). The platform's public justification (P5) was thus fatally mismatched with its operational capacity (P4), exactly as the framework anticipates when ownership costs are high and complements are weak (Hansmann, 1988; Rochet & Tirole, 2006).

The structural outcome was predictable: Proposition 1 (Critical-Mass Failure). The platform never reached the "operational flywheel" where complement quality and participation reinforce each other. Officials acknowledged low installations and paused features due to insufficient supply—classic signs of a shallow liquidity pool in a two-sided market (Rochet & Tirole, 2003, 2006). Meanwhile, the competitive frontier kept moving: incumbents pushed "Q-commerce" through integrated logistics and micro-fulfillment, widening the experience gap (Plantin et al., 2018; Sadowski, 2020).

Answers to the research questions follow directly.
• RQ1 (Critical Mass): Baedal Teukgeup failed to reach self-sustaining adoption because a subsidy-led P2 strategy could not—structurally—be supported by P4 complement parity required for retention in mature two-sided markets. Users reverted to incumbents with superior micro-utility (speed, variety, reliability) (Rochet & Tirole, 2006; Helmond, 2015).
• RQ2 (Ownership Costs): Public ownership directly shaped this failure by imposing high ownership costs (slow iteration, diffused accountability, coordination failures). These frictions systematically favored politically legible actions (subsidies) over operationally complex ones (complement development), undermining strategic capacity (Hansmann, 1988; Pasquale, 2015).

Finally, the findings support a shift toward a "Government-as-a-Platform" stance—not as a monolithic state app but as infrastructure orchestration. Rather than competing head-to-head on logistics and UX (where public governance is disadvantaged), the state can provide boundary resources—open APIs for verified

merchant catalogs, federated identity, public payment rails—lowering fixed costs for multiple operators, including platform cooperatives (Plantin et al., 2018; Benkler, 2006; Scholz, 2016). In such a modular architecture, accountability and operational burden are better distributed: the state ensures fair, reliable rails (P3/P4), while providers compete on UX and service (Helmond, 2015; Benkler, 2006). By shifting focus from the app-layer to the infrastructure-layer, governments can embed public values (P5) into market conditions rather than into a single, uncompetitive product (Plantin et al., 2018; Scholz, 2016).

6. Conclusion

This paper asked why public platforms—despite substantial political and financial backing—so often fail to achieve the critical mass required for sustainable impact. Through a mixed-method case study of Baedal Teukgeup, we proposed and substantiated a "double-bind" thesis: public platforms are simultaneously constrained by the economic demands of two-sided markets (the need for complements and speed) and the organizational constraints of public ownership (the costs of deliberation and diffused accountability) (Rochet & Tirole, 2003, 2006; Hansmann, 1988; Plantin et al., 2018).

Across >3,400 news documents and 58 assembly minute records, we found that the platform's public-value mission (P5) translated operationally into a short-term, unsustainable subsidy strategy (P2). This strategy failed because ownership costs (P3)—visible in slow budget cycles, accountability frictions, and vendor/data lock-ins—created a speed-of-learning deficit, generating persistent complement gaps (P4) that undermined user experience (P5) and, ultimately, critical mass (P1) (Pasquale, 2015; Helmond, 2015; Plantin et al., 2018).

The paper contributes: (1) an integrative explanatory framework linking two-sided-market economics with ownership-cost governance to explain public-platform underperformance; (2) mechanism tracing that shows how governance frictions (P3) degrade complement capacity (P4) to stall network effects (P1); and (3) actionable policy design that reframes failure of the app-centric model

as support for an infrastructure-centric Government-as-a-Platform approach capable of embedding public value in digital markets (Benkler, 2006; Plantin et al., 2018; Scholz, 2016). The study's limitations and directions for future research are discussed in the following section.

7. Limitations

This study makes a focused contribution, but several limitations bound the scope of its claims and point toward productive avenues for future research.

Single-case scope and the risk of over-generalization. The analysis centers on one platform in one province during a specific political period, and the conclusions should not be read as evidence that public delivery platforms fail universally. This claim would be empirically unwarranted. Evidence from other governance contexts shows that alternative models have achieved meaningful scale: hybrid public–cooperative platforms in Rio de Janeiro and large-scale public platforms in Shanghai have demonstrated that state-backed digital infrastructure can succeed under different institutional configurations (Scholz, 2016). The findings of this study are therefore best understood as an explanation of why this particular platform failed in this particular context, not as a general law of public platform behavior. Future research should undertake systematic cross-case comparisons — including cases of success — to isolate the institutional and market conditions that determine whether a public entrant can escape the double bind described here.

Discursive data and the absence of direct behavioral measures. The empirical strategy relies on two textual corpora — a large-scale news dataset and provincial assembly minutes — which capture stated intentions, public framing, and institutional deliberation rather than direct user behavior. Key operational indicators that would more directly test the propositions — monthly active users, order completion rates, courier density by district, churn rates after subsidy windows, and app store ratings over time — were not available in the

analyzed corpora. The near-absence of P4 (data and operational capacity) in public reporting, identified here as a major finding, is itself a symptom of this limitation: the most operationally critical dimension of platform performance was the least visible in the sources available. Future work should supplement discourse analysis with platform-level behavioral data and, where possible, field interviews with platform operators and users, to validate and extend the causal mechanisms proposed here.

Proposition-guided coding and researcher priors. The semisupervised topic modeling pipeline was anchored by five theory-derived propositions (P1–P5) and their associated seed lexicons. While this approach preserves theoretical alignment and interpretive tractability, it also means that the analysis is sensitive to how the propositions were operationalized. Concepts or failure dynamics that fall outside the P1–P5 frame — for instance, political economy factors tied to electoral cycles, or cultural dimensions of technology adoption — may be underrepresented. Robustness checks using purely inductive topic models and alternative seed lexicons would strengthen confidence in the proposition distribution reported in Table 1.

Ownership model scope. This study focuses exclusively on state-led public ownership and does not directly examine cooperative or hybrid ownership structures as operational alternatives. Yet comparative evidence suggests that each model faces its own structural constraints shaped by local institutional environments. In Brazil, worker-led cooperative delivery initiatives that emerged from the Breque dos Apps labor movement encountered legal and capital barriers specific to the Brazilian cooperative legal framework — the prohibition of external equity investment prevented emerging platforms such as AppJusto and Despatronados from accessing startup capital, leading many to adopt non-cooperative legal formats (Zanatta, 2022). In India, platform cooperative efforts in ride-hailing, care work, and delivery in Kerala and Gujarat similarly face challenges rooted in excessive government control, the absence of professional management capacity, and political interference in cooperative governance (Bardia & Scholz, 2022). In Thailand, the Tamsang-Tamsong multi-stakeholder

cooperative for food delivery — combining motorcycle taxi drivers, restaurants, and consumers under shared ownership — demonstrates that stakeholder-governed platforms can address both operational and public-value objectives simultaneously, though scaling such models beyond initial community contexts remains an open challenge (Wantanasombut, 2024). Taken together, these cases suggest that neither public ownership nor cooperative ownership constitutes a universal solution: success depends on the fit between governance structure, institutional environment, legal framework, and the operational demands of two-sided markets. Future research should systematically compare public, cooperative, and hybrid models across governance contexts to identify the conditions under which each can overcome the structural constraints analyzed here.

Ultimately, Baedal Teukgeup's trajectory is a cautionary tale: good intentions and public funds do not overturn the structural dynamics of platform competition. To curate digital markets for public value, governments should move beyond building siloed apps and lean into their distinctive comparative advantage: constructing fair, open, reliable infrastructure on which public and private services can compete (Benkler, 2006; Plantin et al., 2018; Scholz, 2016).

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